DEPARTMENT OF THE ARMY
BUFFALO DISTRICT, CORPS OF ENGINEERS
1776 NIAGARA STREET
BUFFALO, NEW YORK 14207-3199

REPLY TO
ATTENTION OF

May 12, 2000

Project Management

SUBJECT: Lake Ontario Ordnance Works, NYSDEC Comments dated March 20, 2000

Mr. Kent Johnson, Geologist
New York State Department of Environmental Conservation
Division of Solid and Hazardous Waste
Bureau of Radiation & Hazardous Site Management - Room 460
50 Wolf Road
Albany, New York 12233-7255

Dear Mr. Johnson:

This is in response to your March 20, 2000 letter that provided comments related to the Remedial Investigation at the former Lake Ontario Ordnance Works, Niagara County, New York.

Specific responses to your comments are provided in the enclosed Table. I am also enclosing a copy of the Department of Defense Management Guidance for the Defense Environmental Restoration Program dated March 1998. This document is referenced in our responses.

Members of our staff met with you on April 13, 2000 to discuss your comments.

We believe we have addressed your concerns and have directed our contractor to make final arrangements to mobilize and begin Phase 2 sampling in early June.

I appreciate your detailed review and continued support for addressing environmental issues related to the former Lake Ontario Ordnance Works.

If you have any questions or require any additional information, please do not hesitate to all me at (716) 879-4146.

Sincerely,

\signed\

Raymond L. Pilon
Project Manager

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section 1.2 - As ~~stated above~~, the Department does not concur with the scope of the Phase II Remedial Investigation (RI).	RESPONSE section 1.2: Enclosed is a copy of the Department of Defense "Ma Defense Environmental Restoration Program". Lead-based paint, asbestos, and (including transformers and storage tanks) are not eligible for investigation unde The Corps of Engineers will prepare (in the near future) an Inventory Project Re Containerized HTRW" and will provide the report when it becomes available. You should also be aware that areas potentially impacted by non-DOD user, or are not eligible for further investigation under our current investigation. We wil areas under the "Potentially Responsible Parties or Third Party Sites" category c Areas included in the Phase II investigation are eligible under the current progra We plan to continue the investigation of eligible areas while resolving the issue other areas through continued review of the DERP-FUDS policy and open discu

NYSDEC COMMENT (March 20.20001	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Site Specific Sampling and Analysis Plans General - For a Phase II investigation, the approach proposed focuses too heavily on "screening" samples. A greater emphasis on laboratory analysis is needed to provide sufficient information for decision making.	RESPONSE: Do not concur. The sampling and analysis plan has been designe definitive data for a possible future risk assessment at each of the areas included The USACE is aware that the State may not accept a risk-based corrective actic CERCLA and the HTRW program. However, the Phase II sampling and analys to provide adequate information for decision making for possible correction acti risk assessment. To obtain definitive data for each area, approximately 25% of screening analysis are proposed for additional laboratory analysis, both to provi impact from constituents that we cannot screen for and to provide confirmatory The screening performed during the Phase I investigation, and proposed for this presents a cost effective and conservative method of finding and delineating po comparison between VOC field screening and laboratory data revealed that 6 of were reported in lower concentrations for the field screening data. The remaini in the field screening results, providing a more conservative estimate of the pot A similar comparison of the PAH screening results revealed that 2 out of the 52 PAH concentrations in the laboratory sample when compared to the field screer samples reported higher PAH concentrations in the field screening data. Becaus the 73 samples submitted for laboratory TNT analysis, a thorough comparison of laboratory results could not be made. Similarly, PCBs were reported in concent screening analysis reporting limit in two samples. Therefore, a thorough compa field screening data could not be made for the PCB analysis.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
ection B- 1.1 - As iscussed in epartment omments on the hase I RI Report, ?ipe 1" and other nderground piping the vicinity of the)rmer Nitration .reas must be ıvestigated.	RESPONSE: section B-l. 1 There is a possibility that the former LOOW unde Component 1 have been impacted from non-DOD sources; therefore, the pipelin nitration houses are not recommended for further investigation under the HTRW Comment 1.
ection B-l .3.3 - /hy are samples roposed to be)llected from soils djacent to piping citing the bi- initrating and ıononitrating houses stead of sampling ıe contents of the ping? Sampling the)ils will not answer ıe question of hether the piping presents a risk.	RESPONSE: Section B-l .3.3 Concur. It is presumed that these lines are proce (see minutes from 25 May 1999). As such, the lines are likely up gradient of and waste lines within the nitration house area, and are therefore eligible for further be amended to reflect that pipelines entering the building will be excavated and described and sampled.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-l .3.4 - Given the geology (clay till) and hydrogeology (groundwater flow rate < 4"/yr) of the site, additional point spacing of 50' appears excessive. Why are samples proposed for the top of the Glaciolacustrine clay for the biased point? Sample selection should be based on field observations.	RESPONSE: Section B-l .3.4 The initial point spacing is 25 ft. The point spaci if an increasing concentration trend is observed in the field screening data. If re the 50-ft. spacing indicate no constituents and finer resolution of impact is deer samples will be collected at a 25-ft interval. For the biased point sampling at locations BP3, BP4, BP5, and BP6, the text wil samples will be collected from areas of impact based on field observation (eleva In the absence of an area of noticeable impact, the sample will be collected from Glaciolacustrine Clay. For biased point sampling at locations BP7 and BP8, the text will be edited to re will be opened and the contents sampled. An additional soil sample will be coll beneath the piping. The text stating that a sample will be collected from the top will be removed. If the pipes can not be located in the subsurface, a sample will just below the bottom of the foundation of these buildings. Table B-l-l will be sampling intervals.
Table B-l-l - Is "PAH screening" sensitive to TNT, TNT intermediaries and breakdown products?	RESPONSE: Table B-l -1. PAH screening is not sensitive to TNT, TNT inte products. Screening for TNT was not proposed in the Draft Addendum for Phase because it was reported in only one sample in the Phase I screening data at conc action level. However, at the request of the NYSDEC, the Final Addendum for amended to reflect that soil samples will be screened for explosives.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-2.2.2 - The work proposed in this section should be performed with consideration of the data needs of the proposed Interim Removal Action for the Drum Trench.	RESPONSE: Section B-2.2.2. The Drum Trench area has been excluded from tl Interim Removal Action being considered by USACE
Section B-2.3.3 - Why are upgradient groundwater points proposed? General groundwater conditions at the facility have been well documented.	RESPONSE: Section B-2.3.3 The Drum Trench area has been excluded from th Interim Removal Action being considered by USACE.
Section B-3.1 - The work proposed in this section should be performed with consideration to the data needs of the proposed Interim Removal Action for the Trash Pit.	RESPONSE: Section B-3.1 The Trash Pit area has been excluded from this Ph Removal Action being considered by USACE.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-3.3.4 - The Trash Pit is located in the vicinity of the former LOOW TNT production line1. If underground lines are encountered, their contents should be sampled.	RESPONSE: Section B-3.3.4 The Trash Pit area has been excluded from this P Removal Action being considered by USACE.
Table B-3-l - Please note that this Table represents only the intervals which were sampled. Other intervals potentially exist with elevated contaminant levels.	RESPONSE: Table B-3.1 Comment noted.
Section B-4.2.1 - Is the removal action mentioned in this section still being considered? If so, please submit a work plan for review.	RESPONSE: Section B-4.2.1. It is proposed that the ACM Work Plan used for Component 2 will be addended and used for Component 1. Variances, licenses, information specific to the removal action on Component 1 will be included in addendum is completed, a copy will be forwarded to NYSDEC and NY State D

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-4.3.4 (80 point grid) - If (as stated in Section B-4.2.1) the purpose of this sampling program is to confirm contaminant presence / concentration after removal of 6" of soil, why isn't collection of a sample from O-6" (after soil removal) proposed? The placement of till materials should not take place until full characterization of the area has been performed. The minimal number of samples and lack of continuous sampling of boreholes (10' gap between samples) will not allow this investigation to provide sufficient information to make remedial decisions on the extent of contamination.	RESPONSE: Section B-4.3.4 (80 point grid) The purpose of the sampling pro extent (the Glaciolacustrine Clay will limit the vertical extent) of constituents r exceeding screening criteria in the Phase I results. The only constituent exceedi criteria in the surface soil (based on field screening results) within this area was I be corrected to state that a sample will be collected from the 0 to 6-in. interval (location B200. This sample at B200 is already reflected in Table B-4-2. As noted in Section B-4.3.4 (page B-4-7), continuous sampling of the borehole lithologic description and to note field observations possibly indicative of cont If the field geologist observes an interval indicating elevated contaminants (base organic vapor concentrations), the sample will be collected from that interval for screening. Alternatively, if an interval of contamination is not indicated based o a sample will be collected from the interval designated in the tables included in intervals are based on Phase I results. Do not concur that not enough samples are proposed to make remedial decisions Currently, there are 160 samples proposed for field screening analysis and 33 l (approximately 20% of the field screening samples) proposed for this 175 ft by 1 enough data to delineate extent of constituents of concern and perform a risk ass necessary.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-4.3.4 (location DO) - Please note that the surfaces at location DO and CO have been disturbed as part of the Chemical Waste Sewer Interim Removal Action. The proposed approach puts "blinders" on the investigation. Borings should be continuously sampled and screened with intervals exhibiting elevated field reading selected for analysis.	RESPONSE: Section B-4.3.4 (location DO). Comment concerning disturbance a Concur on comment concerning continuous sampling. Continuous sampling is (see section B-4.3.4 pg. B-4-7). Additionally, it is proposed that intervals exhib contamination or elevated organic vapor will be selected for more in depth field referenced paragraph). However, this is not made clear in the text for the sampl each specific location. The depths cited in the text and table are based upon Phas sampling intervals for borings where contamination is not readily identifiable by (and associated tables) for each location specific sampling program will be clarif sampling will be performed and samples for field screening will be collected fr elevated organic vapor concentrations or visual evidence of contamination. In li sample will be collected from the interval of observed exceedance based on Phas

Section B-4.3.4 (location C0) The Phase I sampling location C0 indicated the presence of organic compounds at all three intervals sampled (0-0.5', 3.5-4' & 13.6-14'). Why is the investigation limited to the 14-16' interval?	RESPONSE: Section B-4.3.4 (location C0) Although organic constituents were reported in each interval, exceedances of $1/10^{th}$ NY State comparison criteria were observed in the deep sample only, indicating that the potential source is not at C0, but may be up gradient of C0. If this is that case, the proposed continuous logging and observation of soil cores from the up gradient borings within the C0 grid, as well as the borings within the 80-point grid, should identify the potential source.
Section B-4.3.4 - (location C500) - Sample selection should be based on field observations	RESPONSE: Section B-4.3.4 (location C500). Concur. The text will be revised to reflect that samples will be collected from intervals indicating possible contaminants based on field observations. In lieu of such field observations, the samples will be collected from the proposed intervals, which are based on Phase I results.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-4.3.5 - The collection of groundwater samples as part of Geoprobe sampling should be considered. This method may allow greater flexibility by sampling "hot" areas first and evaluating the need for and location of additional groundwater points.	RESPONSE: Section B-4.3.5. Comment noted. Ground water sampling considered for this area. However due to low yield, high required sample confirming reported constituents due to the lack of a permanent sampling Geoprobe was not chosen for ground water sampling. Additionally, up to this area to evaluate impact to ground water. However, it is unlikely that Alternatively, these wells may be placed in other areas (i.e., Area 4, 7, or
Section B-4.3.6 - Why are PAH analysis proposed for laboratory samples? Wouldn't the necessary information be collected as part of volatile and semi-volatile organic analysis? Why are metals analysis proposed? The Phase I investigation did not indicate metals contamination in the groundwater.	RESPONSE: Section B-4.3.6 The proposed SVOA method does not ob ground water action level for the PAH constituents. Therefore PAH anal determinative method SW846 83 10 (by HPLC) to obtain the lower repor even method 8310 will not achieve RL limits lower than the action level f constituents in an aqueous matrix. Similarly, determinative method 83 10 f to obtain lower detection limits. Metals analysis is included in the Full Suite analysis to determine the full encountered. In the event that a risk assessment is performed, this data w
Table B-4-4 - Metals, PAH, and Cyanide analyses can be eliminated for laboratory samples.	USACE RESPONSE: Table B-4.4 Comment noted. However, a full suite analysis is proposed to determine contaminants encountered, and to provide additional data in the event that

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-5.2.1 - The area in the vicinity of Phase I sampling location C 1-7-BP 1 (Drums on the east side of building) and the former Flare Stack area (G40-G500) need to be investigated.	RESPONSE: Section B-5.2.1 Four biased sampling points will be placed flare stack. Samples will be collected from two intervals, based on field VOCs, PAHs, explosives, and PCBs. Two samples (exhibiting the high constituents based on field screening) will be submitted for laboratory an explosives, boron, and lithium. Additionally, one biased sampling point v of the drums. Samples will be collected from two intervals and submitte TC L/TAL, explosives, boron, and lithium. The Final Addendum for Pha amended to reflect this change.
Section B-5.3.4 - (Sampling and Analysis Plan for Locations HO...) - Screening should be expanded to include VOC's, PCBs, and PAHs.	RESPONSE: Section B-5.3.4 Phase I results did not indicate VOCs, PC of the NY State action level in this area. However, at the request of NYS use of the area, screening will be expanded to include PCBs and VOCs o samples collected from Area 7 and Area 8. The samples chosen for the a parameters will be based upon field observations and historical use of the
Section B-5.3.5 - The Phase I groundwater investigation of this area was not sufficient. Groundwater sampling is necessary and justified in the vicinity of the Area 7 and Area 8 process areas.	RESPONSE: Section B-5.3.5 If constituents exceeding the NY State act in the deep subsurface soil sample, the USACE will be notified. At the of the Design Team Leader and with consideration from the NYSDEC, a installed and sampled (see note 2 on Table B-5-2). Alternatively, if cons concentrations exceeding the action level, a well will be installed in Area 7 there is not an impact to ground water.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-6.3.4 - Sample selection should be based on field observations. Add VOCs to screening parameters.	RESPONSE: Section B-6.3.4 Concur on the comment concerning field analysis is based on constituents reported in concentrations exceeding 1/1(level in the Phase 1 results. If constituents were not reported in concentra value, than that analysis was not proposed in the Draft Addendum for Ph at the request of NYSDEC, VOC screening will be added to approximate collected from the sampling grid around 1100. Samples chosen for the ac be based on field observations (i.e., stained soil, elevated organic vapor). more than 30%) may be screened for VOCs if observations indicate impac
Sections B-7 through B-l 1 - It would greatly assist in review of the work plan if a report on the results of the 1998 Interim Remedial Action (IRA), which addressed asbestos contamination on the Somerset Group property, were available for review. Additional areas of the Somerset Group property are in need of investigation to determine possible impacts. These areas include: underground utilities, debris piles west of Area 30, and a partially buried well approximately 200' east of Area 2 1.	RESPONSE: Section B-7 through B-l 1 First comment noted. The underground utility lines have been or are being addressed. The cher are in the process of undergoing a removal action. The sanitary sewer lir Preliminary Contaminant Assessment (Acres 1992). Results did not indic storm sewer lines were assessed during the PCA and 1998 Phase I RI. R significant impact. The debris pile west of Building 30A is included in the Phase II investig The partially buried well west of Area 21 will be included in the Phase II

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-7.3.4 Portions of this area were excavated and backfilled as part of the 1998 IRA. Please make sure that samples are collected from below recent fill materials.	RESPONSE: Section B-7.3.4 Comment noted.
Section B-8.3.2 Please change the sample location interval to 25' in the PCASS-5-1 investigation area.	RESPONSE: Section B-8.3.2 The text will be changed accordingly.
Section B-8.3.3 Given the geology (clay till) and hydrogeology (groundwater flow rate < 4"/yr) of the site, the proposed 75' spacing from location E200 is excessive.	RESPONSE: Section B-3.3.3. Comment noted. However for this invest evaluate overall extent within and down gradient of the process area. The wells be repositioned such that the up gradient well is further southeast (ir potential source of lithium reported in E200). One of the two down gradi within Area 5. This spacing is greater than 75 feet, but will allow a mor the overall potential ground water impact at Process Area 5. The figure for the Final Addendum for Phase II Investigation to illustrate these changes.
Section B-8.3.4 (Location E200) Sample selection should be based on field observations.	RESPONSE: Section B-8.3.4 (location E200) Concur. See response to co

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-8.3.4 (Location PCASS-3-3 and PCASS-3-4) Sample selection should be based on field observations. Screening should be expanded to include PAHs.	RESPONSE: Section B-8.3.4 (location PCASS-3-3 and PCASS-3-4) Co being based on field observation. See response to comment on Section B results, nor the surface soil sampling results from the PCA performed by exceeding NY State action levels. However, as requested by the NYSDE use of the area, screening for approximately 30% of the shallow soil samp include PAHs. The samples chosen for the additional PAH screening ana observations. Additional samples (i.e., more than 30%) may be screened f indicate possible impact.
Section B-8.3.4 (Location PCASS-5-1, PCASS-5-2 & PCASS 5-4) Screening should be expanded to include PAHs and PCBs. Laboratory analysis of samples should be based on the results of field screening.	RESPONSE: Section B-8.3.4 (location PCASS-5-1, PCASS-5-2 & PCAS field screening results nor the PCA results for samples collected from thes PCBs in concentrations exceeding the NY State action level. However, as and based upon historical use of the area, screening for approximately 30% expanded to include PAHs and PCBs. The samples chosen for the addit be based on field observations. Additional samples (i.e., more than 30%) n and PCBs if observations indicate possible impact.
Section B-8.3.4 (Location PCASS-5-3) Replace laboratory samples for PAHs with Volatile and Semi-Volatile organics.	RESPONSE: Section B-8.3.4 (location PCASS-5-3) The HPLC laborato is required to obtain reporting limits below the action level for PAH con field screening results, nor the PCA laboratory results indicated the presen NY State action level in soil in the samples collected from the tank area VOC analysis is not proposed.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B-8.3.5 Location E200 should be re-sampled prior to installation of additional wells. The Groundwater investigation should focus on actual process areas. Given the hydrogeology groundwater sampling points should be located at potential source areas.	RESPONSE: Section B-8.3.5 See response to comment B-8.3.3.
Section B-9.3.3 Given the geology (clay till) and hydrogeology (groundwater flow rate < 4"/yr) of the site, additional point spacing of 50' appears excessive. A 25' spacing is more appropriate.	RESPONSE: Section B-9.3.3. The initial point spacing is 25 ft. The po to 50 ft if an increasing concentration trend is observed in the field screen samples collected at the 50-ft spacing indicate no constituents and finer necessary, additional samples will be collected at a 25-ft interval.
Section B-10.3.4 Laboratory samples should be analyzed for Semi-volatile organics instead of metals.	RESPONSE: Section B-10.3.4 The samples are proposed for metals anal reported in the results of the PCA. The proposed field screening for PAI samples proposed for full suite will assess the possible impact from the P/

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B- 12.3.3 Given the geology (clay till) and hydrogeology (groundwater flow rate < 4"/yr) of the site, the proposed 75' spacing from location G100 is excessive.	RESPONSE: Section B-12.3.3. Do not concur. The monitoring wells w potential impact to the area in the vicinity of the Phase I location with c A spacing of 75 feet will accomplish this.
Section B-12.3.4 - Sample selection should be based on field observations.	RESPONSE: Section B-12.3.4 Concur. See response to comment B-4.
Section B-12.3.5 - It may be helpful to review information on groundwater flow collected recently at areas of the Niagara Falls Storage Site (NFSS), immediately south of this area of investigation, prior to siting groundwater monitoring points.	RESPONSE: Section B- 12.3.5 Comment noted.

NYSDEC COMMENT (March 20, 2000)	U.S. ARMY CORPS OF ENGINEERS RESPONSE
Section B- 14.1 - Soils data collected as part of the RI recently completed at the NFSS, may also be useful in determining a site background concentration for inorganic parameters.	RESPONSE: Section B- 14.1 Comment noted.